

IV.B.2.N.A. CAESPITOSE COLD-DECIDUOUS DWARF-SHRUBLAND

IV.B.2.N.a.200. GUTIERREZIA SAROTHRAE DWARF-SHRUBLAND ALLIANCE

Snakeweed Dwarf-shrubland Alliance

Alliance Identifier: A.2528

***Gutierrezia sarothrae* - (*Opuntia* spp.) / *Pleuraphis jamesii* Dwarf-shrubland**

Snakeweed - (Prickly-pear species) / James' Galleta Dwarf-shrubland

ELEMENT CONCEPT

GLOBAL SUMMARY: This dwarf-shrubland was described from Utah and northern Arizona where it occurs on level to gently sloping hillslopes, plateaus and bluffs. Elevations range from 1350-2000 m. Aspects are reported from the southeast, south and southwest. Soils are variable, but tend to be fine-textured and may occur over gravel and cobbles. Disturbance may be important in maintaining this vegetation community as some stands have been created by chaining of trees and improper grazing by livestock. This broadly defined association is characterized by an open dwarf-shrub canopy (10-30% cover) that is dominated by *Gutierrezia sarothrae*, frequently with *Opuntia* spp. and an herbaceous layer with *Pleuraphis jamesii* present to abundant (1-30% cover). Some stands have a diverse woody layer that includes low cover of several shrub species and occasional *Pinus edulis* or *Juniperus osteosperma* trees. The herbaceous layer is typically dominated by graminoids with several species present including *Pleuraphis jamesii*, *Achnatherum hymenoides*, *Aristida purpurea*, *Bouteloua gracilis*, *Elymus elymoides*, *Hesperostipa comata*, or *Pascopyrum smithii*. There is usually only sparse cover of native forbs like *Chamaesyce* spp. or *Sphaeralcea coccinea*; however, introduced species such as *Bromus tectorum* or *Salsola kali* may dominate the herbaceous layer of some disturbed stands.

ENVIRONMENTAL DESCRIPTION

USFWS WETLAND SYSTEM: UPLAND

Ouray National Wildlife Refuge Environment: *Gutierrezia sarothrae* Dwarf-shrubland becomes established on sites with little competition from other plant species. Some of these sites are gravel and cobble knolls and flats, others are silty clay flats that may have been disturbed historically by fire or grazing. One stand of *Gutierrezia sarothrae* Dwarf-shrubland was a successional stage from historic occupation by white-tailed prairie dogs.

Global Environment: This association is described from Utah and northern Arizona where it occurs on level to gently sloping hillslopes, plateaus and bluffs. Elevations range from 1350-2000 m. Aspects are reported from the southeast, south and southwest. Soils are variable, but tend to be fine-textured and may occur over gravel and cobbles. Disturbance may be important in maintaining this vegetation community as some stands may have been created by chaining of trees and improper grazing by livestock.

VEGETATION DESCRIPTION

Ouray National Wildlife Refuge Vegetation: *Gutierrezia sarothrae* Dwarf-shrubland stands are also a sparse shrubland with total foliar cover ranging from approximately 10-30%. This type is very likely a successional stage that has become established following a previous disturbance such as prairie dog occupation or heavy livestock grazing. Shrubs in this type rarely exceed 25 cm in height, and except for snakeweed, have foliar cover values of less than 5%. *Gutierrezia sarothrae* foliar cover ranges from 10-25% for the plots sampled. The most commonly associated dwarf shrubs include *Opuntia polyacantha*, *Atriplex confertifolia*, and *Eriogonum microthecum*. Grass species common to this type are *Pleuraphis jamesii* and *Aristida purpurea*; they are usually present at less than 10% foliar cover.

Global Vegetation: This broadly defined association is characterized by an open dwarf-shrub canopy (10-30% cover) dominated by *Gutierrezia sarothrae*, frequently with *Opuntia* spp. and an herbaceous layer with *Pleuraphis jamesii* present to abundant (0-30% cover). Some stands have a diverse woody layer that includes low cover of *Artemisia nova*, *Atriplex canescens*, *Atriplex confertifolia*, *Chrysothamnus viscidiflorus*, *Coleogyne ramosissima*, *Ephedra* spp., *Eriogonum* spp., *Grayia spinosa*, *Lycium pallidum*, *Purshia tridentata*, or occasional *Pinus edulis* or *Juniperus osteosperma* trees. The herbaceous layer is typically dominated by graminoids with several species present including *Pleuraphis jamesii*, *Achnatherum hymenoides*, *Aristida purpurea*, *Bouteloua gracilis*, *Elymus elymoides*, *Hesperostipa comata*, or *Pascopyrum smithii*. There is usually only sparse cover of native forbs like *Chamaesyce* spp. or *Sphaeralcea coccinea*; however, introduced species such as *Bromus tectorum*, *Erodium cicutarium*, *Sisymbrium altissimum*, or *Salsola kali* may dominate the herbaceous layer of some disturbed stands.

Ouray National Wildlife Refuge Vegetation Mapping Project

Dynamics: *Gutierrezia sarothrae* occurs in many natural grassland and steppe communities in the western U.S. and is known to increase when these communities are disturbed mechanically or by over-grazing (Stubbendieck et al. 1992, USFS 1937). The role of disturbance in this association needs further study to understand its successional nature.

MOST ABUNDANT SPECIES

Ouray National Wildlife Refuge

Stratum	Species
DWARF SHRUB	<i>Gutierrezia sarothrae</i> , <i>Atriplex confertifolia</i> , <i>Opuntia polyacantha</i> , <i>Eriogonum microthecum</i>
HERBACEOUS	<i>Pleuraphis jamesii</i> , <i>Aristida purpurea</i> , <i>Salsola kali</i>

Global

Stratum	Species
DWARF SHRUB	<i>Gutierrezia sarothrae</i>
GRAMINOID	<i>Pleuraphis jamesii</i>

CHARACTERISTIC SPECIES

Ouray National Wildlife Refuge

Species
Gutierrezia sarothrae, *Opuntia polyacantha*, *Pleuraphis jamesii*, *Aristida purpurea*

Global

Species
Gutierrezia sarothrae, *Pleuraphis jamesii*

OTHER NOTEWORTHY SPECIES

Ouray National Wildlife Refuge

Stratum **Species**
N/A

Global

Stratum **Species**
N/A

GLOBAL SIMILAR ASSOCIATIONS:

Gutierrezia sarothrae / *Pleuraphis rigida* Shrub Herbaceous Vegetation (CEGL001543)--possibly an anthropogenically disturbed *Pleuraphis rigida* grassland.

Gutierrezia sarothrae - *Krascheninnikovia lanata* - *Atriplex canescens* / *Bouteloua eriopoda* Shrub Herbaceous Vegetation (CEGL001733)--rare grassland endemic to Grand Canyon National Park.

Gutierrezia sarothrae / *Sporobolus airoides* - *Pleuraphis jamesii* Shrub Herbaceous Vegetation (CEGL001776)--described from northwestern New Mexico.

SYNONYMY: N/A

CLASSIFICATION COMMENTS

Ouray National Wildlife Refuge: N/A

Global Comments: This broadly defined dwarf-shrubland includes stands that could also be classified as a dwarf-shrub herbaceous association.

Ouray National Wildlife Refuge Vegetation Mapping Project

ELEMENT DISTRIBUTION

Ouray National Wildlife Refuge Range: *Gutierrezia sarothrae* Dwarf-shrubland occupies thin silty clay soils and gravel and cobble beds, on relatively flat surfaces. The largest stands are located at the overlooks for Leota and Johnson Bottoms and a hillslope west of SH 88.

Global Range: This association is described from Utah and northern Arizona, but is likely more widespread throughout the semi-arid western U.S.

Nations: US

States/Provinces: AZ UT

TNC Ecoregions: 10:C, 19:C, 21:C

USFS Ecoregions: 313A:CC, 341C:CC, M313A:CC

Federal Lands: NPS (Walnut Canyon, Zion); USFWS (Ouray)

ELEMENT SOURCES

Identifier: CEGL002690 **Confidence:** **Conservation Rank:** G?

REFERENCES: Stubbendieck et al. 1992, Thompson 2001, USFS 1937, Von Loh 2000.